Claims

[c1]   A remote diagnostic unit for use with a heavy vehicle,
comprising:

a pin connector communicating with a data bus on the
vehicle, the pin connector receiving a signal from the
data bus;

a microcontroller receiving and interpreting a standard
diagnostic message as a function of the signal received
by the pin connector; and

a plurality of lights controlled by the microcontroller as a
function of the standard diagnostic message.

[c2]   The remote diagnostic unit as set forth in claim 1,
wherein the microcontroller includes a UART.

[c3]   The remote diagnostic unit as set forth in claim 1, fur-
ther including:

a reset switch, communicating with the microcontroller,
for at least one of clearing the diagnostic message from
an ECU and causing the ECU to enter a self-configuration
mode.

[c4]   The remote diagnostic unit as set forth in claim 1,
wherein the diagnostic message indicates a status of an

ABS ECU on the vehicle.

[c5]   The remote diagnostic unit as set forth in claim 1, wherein the data bus is a J1587 serial data bus, further including:

a plurality of the pin connectors for communicating with the J1587 serial data bus.

[c6]   The remote diagnostic unit as set forth in claim 1, further including:

a signal conditioner, between the pin connector and the microcontroller, for conditioning the signal received by the pin connector into the standard diagnostic message, which is interpreted by the microcontroller.

[c7]   The remote diagnostic unit as set forth in claim 6, wherein the signal conditioner is an RS485 device.

[c8]   The remote diagnostic unit as set forth in claim 1, wherein the microcontroller is a PIC16F870 device.

[c9]   The remote diagnostic unit as set forth in claim 1, wherein the lights include light emitting diodes.

[c10] A remote diagnostic communication interface for use with a heavy vehicle, comprising:

a pin connector communicating with a data bus on the vehicle, the pin connector receiving a signal from the

data bus;

means for conditioning the signal and producing a standard diagnostic message as a function of the signal;

means for receiving and interpreting the standard diagnostic message; and

a plurality of lights being selectively illuminated as a function of the standard diagnostic message.

[c11] The remote diagnostic communication interface as set forth in claim 10, wherein the means for conditioning includes an RS485 device.

[c12] The remote diagnostic communication interface as set forth in claim 10, wherein the means for receiving and interpreting the standard diagnostic message includes a UART.

[c13] The remote diagnostic communication interface as set forth in claim 12, wherein the means for receiving and interpreting the standard diagnostic message includes a PIC16F870 device.

[c14] The remote diagnostic communication interface as set forth in claim 10, wherein the pin connector communicates with the data bus via a vehicle connector.

[c15] The remote diagnostic communication interface as set forth in claim 10, further including:

a reset switch, communicating with the means for receiving and interpreting the standard diagnostic message, for at least one of selectively clearing an ECU and selectively causing the ECU to enter a reconfiguration mode.

[c16]   The remote diagnostic communication interface as set forth in claim 15, wherein:
the reset switch is activated in response to a magnet;
the ECU is cleared when the reset switch is activated for a first period of time; and
the ECU enters the reconfiguration mode when the reset switch is activated for a second period of time.

[c17]   The remote diagnostic communication interface as set forth in claim 10, wherein:
the lights are light emitting diodes; and
the standard diagnostic message indicates a fault status of an associated ECU.

[c18]   A system for diagnosing an electrical system on a heavy vehicle, the system including:
an electronic control unit;
a data bus communicating with the electronic control unit; and
a remote diagnostic unit, including:
a pin connector;

a microcontroller receiving and interpreting a standard diagnostic message as a function of the signal received by the pin connector; and

a plurality of lights controlled by the microcontroller as a function of the standard diagnostic message.

[c19]   The system for diagnosing an electrical system as set forth in claim 18, further including:

a reset switch, communicating with the microcontroller, for one of clearing the diagnostic message from an ECU and transmitting a self-configuration command to the ECU.

[c20]   The system for diagnosing an electrical system as set forth in claim 18, wherein the data bus is a J1587 serial data bus.

[c21]   The system for diagnosing an electrical system as set forth in claim 18, further including:

a vehicle pin connector, communicating with the data bus, which mates with the pin connector of the remote diagnostic unit.

[c22]   The system for diagnosing an electrical system as set forth in claim 18, wherein the standard diagnostic message indicates a fault status of the electronic control unit.

[c23]   The system for diagnosing an electrical system as set forth in claim 18, wherein the microcontroller includes a UART.

[c24]   The system for diagnosing an electrical system as set forth in claim 18, wherein the data bus is a J1587 serial data bus.

[c25]   A method for remotely displaying a fault status of an electronic control unit, the method comprising:
determining the fault status of the electronic control unit;
transmitting a signal from the electronic control unit to the data bus, the signal indicating a standard message for identifying a fault status of the electronic control unit;
receiving the signal into a remote diagnostic unit;
interpreting the signal as the standard message within the remote diagnostic unit; and
illuminating selected lights on the remote diagnostic unit as a function of the standard message.

[c26]   The method for remotely displaying a fault status as set forth in claim 25, wherein the interpreting includes:
conditioning the signal into the standard message; and
identifying the fault status as a function of the standard

message.

[c27]   The method for remotely displaying a fault status as set
forth in claim 26, wherein:

the conditioning includes:

transforming the signal into the standard message in a
circuit including an RS485; and

the identifying includes:

identifying the fault status within a UART included within
a microcontroller of the remote diagnostic unit.

[c28]   The method for remotely displaying a fault status as set
forth in claim 25, further including:

activating a reset switch for at least one of clearing the
electronic control unit and causing the electronic control
unit to enter a reconfiguration mode.

[c29]   The method for remotely displaying a fault status as set
forth in claim 28, wherein the reset switch is a magnetic
switch, the activating including:

passing a magnet within a range for causing a response
in the magnetic switch.